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The Bihar Paradox: Fiscal Fragility and Beneficiaries' Access to Primary Education

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Abstract

Bihar's fiscal performance presents a paradox: while the state has emerged as an 'Achiever' in terms of quality of expenditure, its persistently weak revenue mobilization and rising fiscal deficits raise serious concerns for sustaining social investments. Drawing on DISE (2020-22) data, this paper constructs a multidimensional Access Index for primary education across 15 major Indian states and finds Bihar at the bottom tier, primarily due to poor affordability and adaptability. The findings are juxtaposed with insights from the recently released Fiscal Health Index (2025), which reveals that fiscal stress and subsidy burdens in Bihar crowd out spending in critical social sectors. The paper argues that policy interventions must move beyond infrastructure creation and textbook subsidies to address structural fiscal constraints and the high opportunity cost of schooling for marginalized households. Reducing household education costs, incentivising teacher commitment, and aligning fiscal reforms with social policy are crucial to achieving inclusive and sustainable primary education access in Bihar.

Keywords: *Access Index, Affordability, Adaptability, Fiscal Health Index, Inclusive.*

1. Introduction

The issue of access to primary education in Bihar cannot be understood in isolation from the state's broader fiscal health. Over the past two decades, Bihar has expanded its educational infrastructure under programmes such as Sarva Shiksha Abhiyan, Mid-Day Meal Scheme, and the Right to Education Act. Yet, the persistence of low affordability and adaptability in primary education particularly among girls and marginalized communities raises concerns about the sustainability of these efforts.

The recently released *Fiscal Health Index (2025)* highlights a paradox in Bihar's fiscal landscape. The state ranks high in "Quality of Expenditure," reflecting its orientation towards social and economic services. However, Bihar remains the weakest in "Revenue Mobilization," and fiscal deficits have consistently breached the Bihar FRBM limits. Nearly one-third of its revenue expenditure is absorbed by salaries, pensions, and interest payments, leaving limited fiscal space for education. Rising power subsidies further constrain developmental spending. This fiscal fragility directly impacts Bihar's ability to compensate for the high opportunity cost of schooling borne by poor households.

In this context, the problem of access is not merely a question of infrastructure but one of policy design and fiscal prioritization. Despite well-designed schemes providing free textbooks, uniforms, and mid-day meals, affordability remains critically low. Our Access Index, based on DISE (2020-22) data, ranks Bihar

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13th among 15 states, with particularly weak performance in affordability and adaptability dimensions. The persistence of these gaps reflects the structural challenge of aligning fiscal policy with social policy in Bihar.

This paper thus situates Bihar's access problem within a dual framework: the multidimensional paradigm of educational access and the constraints of fiscal health. By linking micro-level exclusion in schooling to macro-level fiscal stress, it seeks to raise critical policy questions: Can Bihar sustain social sector spending without reforming its revenue base? How can fiscal policies be restructured to reduce the opportunity cost of education for the poor? Addressing these questions is central to ensuring that fiscal consolidation and inclusive development proceed hand in hand.

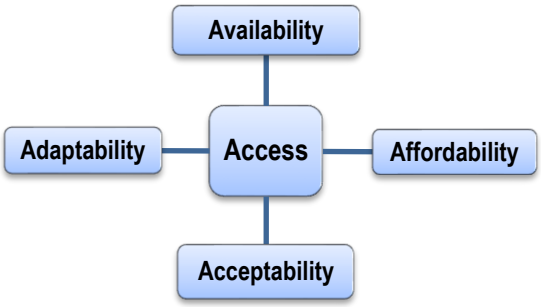
The paper is organised in four parts. The first section outlines the conceptual concerns of educational access, moving beyond infrastructure to include affordability, acceptability, and adaptability. The second section details the methodology for constructing the Access Index using DISE data (2020-22). The third section applies this framework to 15 major Indian states, with a particular focus on Bihar, and reveals its low rank driven by weak affordability and adaptability. The discussion section links these findings with insights from the *Fiscal Health Index (2025)*, highlighting how Bihar's fiscal fragility manifested in poor revenue mobilization and rising debt constrains the sustainability of its social investments. The article concludes with policy implications, arguing that universalising access to primary education in Bihar requires not only school-level reforms but also fiscal reforms that expand the state's capacity to compensate household costs and strengthen inclusion.

2. Literature Review: Beneficiaries' Access

Access is more than just the existence of facilities, but includes relevance and consequences, affordability and social and organizational impediments to accessing the facility. From a multidimensional perspective, access can be viewed as consisting of four components, namely, availability, affordability, acceptability, and adaptability (Raman & Sulochana, 2013; Raman & Sulochana, 2014; Sulochana, 2015). This table below illustrates the four components:

Chart-1

Multidimensional Paradigm of Access to Primary Education (Sulochana, 2015)



Access has been described by Raman and Sulochana (2013) as having four components, namely availability, affordability, acceptability, and adaptability. Historically, access has been discussed within the context of availability. This means that the discussion of access was centered on whether or not there was adequate provision for such access through the construction of necessary infrastructure (Dreze & Kingdon, 2001; Basant & Sen, 2010). The affordability of primary education involves costs incurred by the learner. These are classified as either direct costs or opportunity costs. Direct costs involve expenses such as tuition fees, costs related to purchasing textbooks and other educational materials, transport costs, and school uniforms. On the other hand, the opportunity cost is associated with the loss of income that the parent incurs because of their children attending school. It should be noted that children even at very tender ages help out

their parents in poor families to earn a living (Dreze & Sen, 1996; Tilak, 1996; Unni, 2009; Lal, 2010). Acceptability as Access refers to the correct behavior of educators and education administrators in motivating the involvement of learners from all social strata. Exclusion from the education system will occur because of the discouraging attitude of teachers towards the underprivileged children (Sulochana, 2015; Jha & Jhingran, 2002; Bordia, 2005; Nambissan, 2006; Vasavi, 2006; Saxena, 2006). Adaptability pertains to the need for education, which includes the drive, will, and mental readiness for learning. No matter how much facilities are made available and motivated to use, all the effort will amount to nothing if the beneficiaries have no independence, urgency, and desire to make use of the facilities. In reality, many of the illiterate people consider working from home or outside their homes better than going to school since they do not expect anything positive from education in the future and thus fail to see the necessity for education (Sulochana & Raman, 2014; Govinda & Bandyopadhyay, 2008; Mumba, 2002; Venkatanarayan, 2009).

However, a considerable body of research on the topic of primary education in India is centered solely on infrastructure development, such as classroom construction, school facilities, toilet provision, and the appointment of teachers as the primary measure of access. While this is necessary for identifying the lack of availability, this approach also creates the possibility of generating a partial or inaccurate picture. It is clear from this that mere availability is not enough to ensure inclusivity. Therefore, the achievement of educational outcomes and exclusion must be measured based on the broader "access framework." Only once the issue is pinpointed, targeted interventions can be introduced in the relevant sector.

Another critical gap in the literature is the lack of integration between educational access and fiscal policy. While access studies often stop at documenting inequalities in enrolment or achievement, they rarely ask the policy-relevant question: how can state finances be structured to sustain genuine inclusion? The evidence from Bihar demonstrates that despite achieving relatively high scores on availability, affordability and adaptability remain weak. This is not merely a pedagogical or social issue but also a fiscal one. The *Fiscal Health Index (2025)* shows that Bihar's limited revenue mobilization and rising debt leave little room for compensating household opportunity costs.

Future research must therefore bridge this gap by situating educational access within the broader framework of state fiscal health. Without adequate revenue mobilization, rational allocation of subsidies, and fiscal discipline, efforts to universalize access will remain unsustainable. The literature has not sufficiently explored this intersection. By linking the multidimensional paradigm of access with fiscal measures, this paper seeks to fill that gap, showing that ***sustainable educational inclusion in Bihar requires fiscal as well as social reform***.

3. Methodology & Database

The study uses secondary data namely, ***DISE (*2020-22*)*** and data for different states has been collected from State Report Card. Based on this, 4A's of access depend upon different sub-indicators as given below in the table-

Table 1. Indicators of Access as per DISE (Sulochana & Raman, 2014; Sulochana, 2015)

AVAILABILITY			
1.	% single classroom schools	8.	Average no. of teachers
2.	% single teacher schools	9.	% teachers with graduate degree and above
3.	% no female teacher schools (tch>=2)	10.	Infrastructure 1. % schools with girls toilet 2. % schools with drinking water facility 3. % Govt. schools with kitchen-shed 4. Average no. of classrooms per school 5. % schools having no building to total schools
4.	Enrolment (GER)		
5.	Enrolment (NER)		
6.	Pupil-teacher ratio (PTR)		
7.	% female teachers		

AFFORDABILITY			
1.	Direct Cost	5.	Subsidy- Sex-wise % of students benefitted with incentives- a. Textbook b. Uniform c. Attendance Scholarship d. Stationary
2.	Opportunity Cost		
3.	Gross Cost		
4.	Net Cost of Education		

ACCEPTABILITY	
1.	% SC teachers to total teachers
2.	% ST teachers to total teachers
3.	No. of teachers included in non-teaching activities
4.	No. of days teachers carried on non-teaching activities
5.	Working days of school on an average

ADAPTABILITY			
1.	Enrolment of different social group by population and enrolment of girls by sex ratio i. % SC Enrolment ii. % SC girls iii. % ST enrolment iv. % ST girls v. % Muslim enrolment vi. % Muslim girls vii. % girls	2.	Performance in Examination 1. Percentage of boys passed class 5th with less than 60 percent marks 2. Percentage of girls passed class 5th with less than 60 percent marks
		3.	GPI
		4.	DR

The indicators included to capture different components are very diverse in nature and are measured in different units. Thus, it is not possible to compute indices directly. The indicators are to be first normalised (made unit independent) and then should be assigned weights. After this, group indices have been developed for each dimension of access (4A's) i.e., availability, affordability acceptability and adaptability. For this, each of A's which depend on a number of sub-indicators has been first normalised between values 0 and 1. With the help of max-min method, each indicator is made scale free (for all the states). The formula give below has been used for normalization-

$$NV_{ij} = 1 - \left(\frac{\{Best\ X_i - Observed\ X_{ij}\}}{\{Best\ X_i - Worst\ X_i\}} \right)$$

Here, Best Xi and Worst Xi are the highest and lowest values of the specific indicator for all regions, Observed Xij is the actual value of the specific region, and NVij is the normalized value of the indicator (which falls between 0 and 1).

Principal component analysis (PCA) has been done with the help of factor loadings and Eigen values, whereby the weights are assigned to different group-indices using the normalized values. As a result, all four indicators' indices (4A's) have been calculated. Lastly, using group indices, the Composite Access Index for Bihar's primary education has been computed.

The Index formula is given as follows-

$$I = \frac{\sum_{i=1}^{n} X_i \left(\sum_{j=1}^{n} |L_{ij}| . |E_j| \right)}{\sum_{i=1}^{n} \left(\sum_{j=1}^{n} |L_{ij}| . E_j \right)}$$

where i is the index, Xi is the ith indicator, Lij is the ith variable's factor loading value on the jth factor, and Ej is the jth factor's Eigen value. Lastly, the access index is used to rank each of the 15 states.

4. Result: Measuring Composite Access Index

Table-2 shows the access score of 15 major states in terms of different indices.

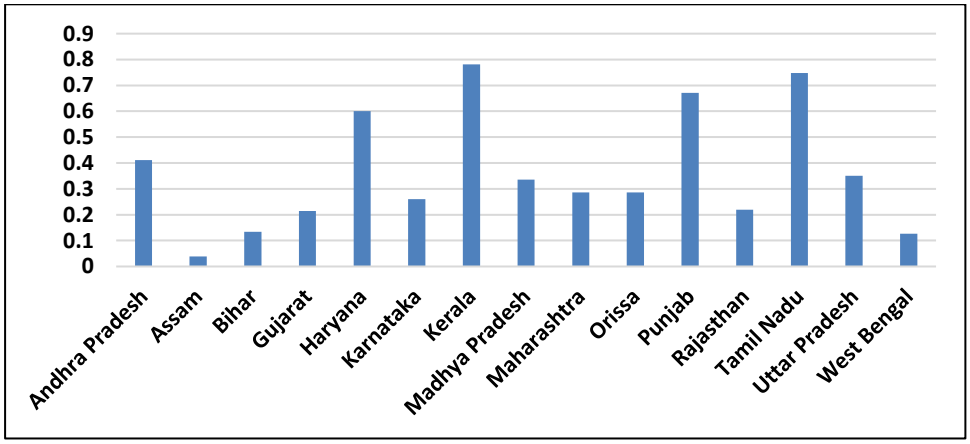
Table-2: Composite Access Index and Ranking of 15 States

States	Availability Index	Rank	Affordability Index	Rank	Acceptability Index	Rank	Adaptability Index	Rank	Access Index	Rank
Andhra Pradesh	0.197	7	0.588	4	0.335	12	0.855	7	0.411	5
Assam	0.004	14	0.416	8	0.328	13	0.147	14	0.039	15
Bihar	0.094	11	0.002	15	0.790	1	0.346	11	0.134	13
Gujarat	0.273	6	0.160	14	0.301	14	0.924	6	0.215	12
Haryana	0.426	5	0.445	7	0.600	7	0.994	2	0.601	4
Karnataka	0.167	9	0.176	13	0.614	6	0.830	8	0.260	10
Kerala	0.890	1	0.820	1	0.204	15	0.976	3	0.781	1
Madhya Pradesh	0.001	15	0.783	2	0.565	8	0.269	13	0.336	7
Maharashtra	0.176	8	0.213	11	0.510	10	0.971	5	0.286	8
Orissa	0.014	12	0.618	3	0.553	9	0.413	10	0.286	9
Punjab	0.668	3	0.301	9	0.657	3	0.974	4	0.671	3
Rajasthan	0.009	13	0.197	12	0.740	2	0.781	9	0.219	11
Tamil Nadu	0.733	2	0.501	5	0.450	11	0.996	1	0.748	2
Uttar Pradesh	0.436	4	0.477	6	0.621	5	0.039	15	0.351	6
West Bengal	0.138	10	0.214	10	0.624	4	0.324	12	0.126	14

Source: Author's calculation from DISE-2020-22 Data

As it can be seen in the above table, Table-2 identifies that Table-2 has significant inter-state differences in primary education access in the chosen states. The findings indicate that Kerala has the highest access index (0.78) with Tamil Nadu and Punjab having the index of 0.75 and 0.67 respectively. Assam (0.03), West Bengal (0.13) and Bihar (0.13) on the other hand have the lowest rate of access to primary education. Figure-1 provided below can also be used to understand the variation in access index of all the states.

Figure-1: Access Index of 15 States of India

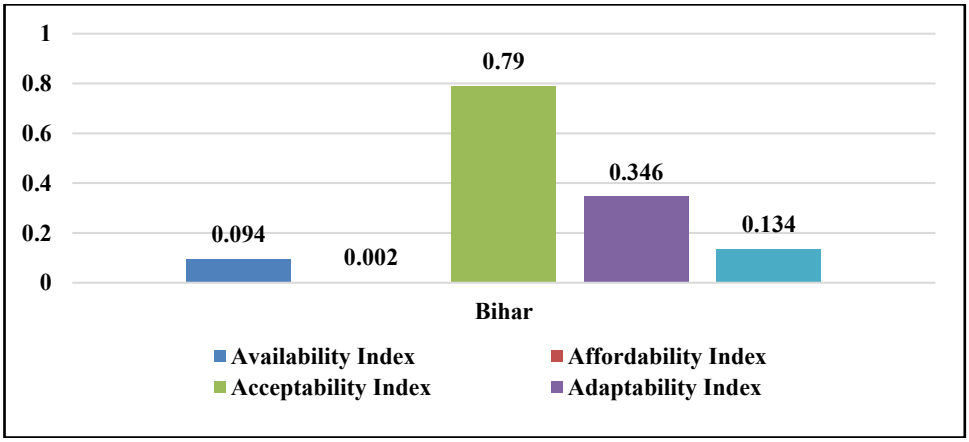


- It is evident that the access index of Kerala is much higher because of the good education system, the high literacy rate, and the comparatively increased affordability of education to the masses. Human development and investment in the social sector have been considered an important priority by the state, which greatly reinforced the accessibility of education.
- Figure-2 provided below gives a clear picture on the inter-state difference in cost of education. The analysis also suggests that opportunity cost of education is very important in affecting the affordability. Even though the government offers a number of subsidies like free textbooks, stationeries, uniforms, and mid-day meal scheme, they are not sufficient to bring about significant change in the index of affordability. This implies that the opportunity cost of schooling children, especially when it comes to the household labour or income one forgoes, will have to be offset before education becomes affording

to weaker households. That is why to reach the goal of universalization of primary education, the government interventions should not only be the basic subsidies but also the economic limitations of the poor families.

- The findings also indicate that there is a great inter-state difference in the cost of education burden. Compared to other states, Tamil Nadu, Kerala and Madhya Pradesh are comparatively better related in terms of socio-economic development, which is reflected on a higher level of affordability. On the contrary, less developed states such as Bihar, West Bengal, Rajasthan and Gujarat still have an uphill task on affordability. The affordability index in these states is relatively low which implies that the objective of free and universal education is not easily attainable according to the current policy framework. The returns to the high opportunity cost incurred by the poor households are in most cases less than what is offered as benefits through the mid-day meal scheme. Therefore, it will be necessary to introduce efficient financial incentive programs like scholarships, conditional cash transfers, or income support programs to ensure that such children with disadvantaged backgrounds are introduced into the education system.

Figure-2: Position of Bihar in 4A's & Access Index



- Regarding Bihar, the state has a score of 0.13 in access index, which is 13th in the list of the state, and there is limited access to education. Though availability index (0.09) indicates that there is basic education infrastructure in place, the index of affordability (0.00) and relatively poor adaptability indices has a major negative impact on access to education effectively. This implies that even though the physical infrastructure is being improved, the needs of the economically weaker and marginalized population are still low in terms of education.
- This is a situation that is caused by a number of socio-economic factors. The attitude of parents towards the education of girls and prejudice against it is one of the reasons and is still relevant to the choice of schooling in the state. Moreover, the teachers dedication and routine also influence the schooling acceptance. The administrative and non-teaching roles keep the teachers occupied and therefore limit their positive participation in the classroom teaching. Low affordability, lack of adaptability and social constraint leads to low access index in Bihar, hence, a combination of the factors.
- On the whole, the indices show clearly that to facilitate access to primary education, it is not only necessary to increase the availability of educational infrastructure, but also to focus on socio-economic factors, including opportunity costs, affordability constraints, and social attitudes towards education.

5. Discussion: The Bihar Paradox

Bihar's fiscal and educational outcomes reveal a striking paradox. On one hand, the state is ranked as an "Achiever" in Quality of Expenditure in the *Fiscal Health Index (2025)*, indicating that a relatively higher share of its spending goes to developmental sectors such as education and health. On the other hand, Bihar

performs the worst in Revenue Mobilization and suffers from persistent fiscal deficits and rising debt, leaving limited fiscal space for sustained social investments.

At the micro level, this paradox is mirrored in primary education access. The state has expanded infrastructure and enrolments through national programmes, yet continues to rank at the bottom in Affordability and Adaptability within the Access Index constructed in this study. Poor households still face high opportunity costs when sending children—especially girls—to school, while fiscal constraints prevent the state from adequately compensating them.

The key policy challenge, therefore, is not merely to expand infrastructure but to link fiscal reforms with social sector priorities. Without strengthening revenue mobilization and rationalising subsidies, Bihar will struggle to sustain inclusive educational access. The solution lies in designing education policies that are fiscally viable and socially responsive—ensuring that the state's developmental expenditure translates into meaningful, long-term inclusion in primary education.

6. Policy Implications: Way to Go

The analysis of Bihar's access to primary education reveals that infrastructure creation alone is insufficient to guarantee inclusion. The state's relatively high score in the Availability Index reflects investments in physical facilities, but its poor performance in Affordability and Adaptability underscores the limits of such an approach. Unless children from poor and marginalized households are able to overcome the high opportunity cost of schooling, universal access will remain elusive.

At the same time, Bihar's fiscal performance poses structural constraints on expanding educational access. The *Fiscal Health Index (2025)* shows that while Bihar is an "Achiever" in terms of Quality of Expenditure, it is the lowest-ranked state in Revenue Mobilization. With a *fiscal deficit of 5.9% of GSDP and a debt–GSDP ratio of nearly 39%*, the state faces limited fiscal space for innovative education financing. Moreover, nearly two-thirds of revenue receipts are absorbed by committed expenditures—salaries, pensions, and interest payments—leaving little room to expand direct support to vulnerable households.

Against this backdrop, policy interventions must be fiscally sensitive as well as socially inclusive. Three broad directions emerge:

1. *Reducing Household Burden and Opportunity Cost*
    - Expanding cash transfers or conditional scholarships targeted at first-generation learners and girls could offset household income losses when children attend school.
    - Linking educational subsidies to attendance and performance would create stronger incentives for continuity, particularly for girls.
2. *Reprioritising Expenditure within Fiscal Constraints*
    - Given limited fiscal space, education spending must move beyond textbook subsidies and mid-day meals to include *direct parental compensation mechanisms.*
    - A reallocation of subsidies—especially rationalising non-merit subsidies such as power—could free resources for social spending.
3. *Strengthening Adaptability through Fiscal-Linked Innovations*
    - Pilot programmes that link primary education with vocational exposure and skill training, even at an early stage, could make education more relevant for households evaluating its future returns.
    - Teachers' incentives and performance-linked pay, integrated with broader fiscal reforms, could enhance accountability in classroom practices.

The broader lesson is that ***access to primary education in Bihar is inseparable from the state's fiscal health***. Unless revenue mobilization improves and fiscal discipline is restored, the state will struggle to finance the measures necessary to reduce exclusion. In this sense, education policy must be co-designed with fiscal policy: strategies for expanding inclusion in schools must be underpinned by strategies for strengthening the state's fiscal capacity.

7. Conclusion

There is a structural paradox in Bihar's primary education access. On paper, the state has made substantial investments in educational infrastructure and social sector spending, reflected in its relatively strong performance in the Quality of Expenditure dimension of the Fiscal Health Index (2025). Yet, these investments have not translated into meaningful gains in affordability and adaptability, the two weakest dimensions of access in Bihar.

This micro-level reality is inseparable from Bihar's macro-level fiscal fragility. Therefore, the way forward requires bridging fiscal reform with social policy design. Enhancing revenue mobilization through better tax compliance and rationalisation of subsidies can create fiscal room to expand targeted educational incentives. At the same time, expenditure strategies must move beyond infrastructure creation to include direct compensation for opportunity costs, stronger teacher accountability, and programmes that enhance the perceived value of schooling for poor households.

Exclusion from primary education in Bihar is thus not only a question of school-level deficiencies but also of the state's fiscal priorities and capacities. For universal access to become a reality, Bihar must align its fiscal health with its social sector commitments, ensuring that developmental spending is both sustainable and inclusive.

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